

We Claim:

1. A shock-absorbing guardrail comprising:
  - a guard fence having a back; and,
  - a mid-filler attachment affixed to the back of the guard fence.
2. The guardrail according to claim 1 further comprising:
  - at least one arm affixed to the mid-filler attachment; and,
  - a connector for releasably affixing the arm to the back of the guard fence.
3. The guardrail according to claim 1 further comprising:
  - a support post affixed to the mid-filler attachment.
4. The guardrail according to claim 3 further comprising:
  - a shock-absorbing resin positioned between the back of the guard fence and the support post.
5. The guardrail according to claim 3 further comprising:
  - a shock-absorbing pipe positioned between the guard fence and the support post.

6. The guardrail according to claim 1 wherein the mid-filler attachment has an ohm-shaped cross-section.

7. The guardrail according to claim 1 further comprising:

a large mid-filler attachment; and,

a small mid-filler attachment positioned within the large mid-filler attachment, wherein the mid-filler attachments are affixed to the back of the guard fence.

8. The guardrail according to claim 2 further comprising:

a connector wherein the mid-filler attachment is releasably affixed to the support post with the connector.

9. The guardrail according to claim 1 wherein the mid-filler attachment undergoes irreversible deformation when the guard fence is impacted.

10. The guardrail according to claim 1 further comprising:

a structure selected from the group consisting of support poles, hydrants, semaphoric poles, bifurcations (diverging point), anti-collision sections, sectional walls, walls at parking lots, concrete walls, light pole foundations, and loading docks wherein the structure is affixed to the guard fence with the mid-filler attachment positioned therebetween.

11. The guardrail according to claim 9 further comprising:  
a shock-absorbing resin positioned between the guard fence and the structure.
12. The guardrail according to claim 10 further comprising:  
a shock-absorbing pipe positioned between the guard fence and the structure.
13. The guardrail according to claim 12 further comprising:  
a shock-absorbing resin positioned between the guard fence and the structure.
14. The guardrail according to claim 10 wherein the mid-filler attachment has an ohm-shaped cross-section.
15. The guardrail according to claim 10 wherein the mid-filler attachment has an open pipe shaped cross-section.
16. The guardrail according to claim 10 wherein the mid-filler attachment is affixed to the structure with connection parts.

17. A shock-absorbing guardrail for structures comprising:  
a guard fence having a back;  
a big mid-filler attachment; and,  
a small mid-filler attachment positioned within the big mid-filler attachment, wherein the mid-filler attachments are affixed to the back of the guard fence.

18. The guardrail according to claim 17 wherein the small mid-filler attachment is laminated to the big mid-filler attachment.

19. The guardrail according to claim 17 wherein the big mid-filler attachment and the small mid-filler attachment are arranged in layers.

20. The guardrail according to claim 17 further comprising:  
a shock absorbing resin positioned within the mid-filler attachments.

21. The guardrail according to claim 17 further comprising:  
a structure selected from the group consisting of support poles, hydrants, semaphoric poles, bifurcations (diverging point), anti-collision sections, sectional walls, walls at parking lots, concrete walls, light pole foundations, and loading

docks wherein the structure is affixed to the guard fence with the mid-filler attachments positioned therebetween.

22. The shock-absorbing guardrail of claim 17 further comprising:

a shock-absorbing resin affixed to the back of the guard fence.

23. The shock-absorbing guardrail of claim 17 further comprising:

a shock-absorbing pipe affixed to the back of the guard fence.

24. A method of producing a shock absorbing guardrail comprising:

providing a guard fence having a back;

attaching a mid-filler attachment to the back of the guard fence.

25. The method of claim 24 further comprising:

attaching the mid-filler attachment to a support post so that the mid-filler attachment is positioned between the back of the guard fence and the support post.

26. The method of claim 25 further comprising:

attaching a shock absorbing resin between the back of the guard fence and the support post.

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27. The method of claim 24 further comprising:

attaching the mid-filler attachment to a structure so that the mid-filler attachment is positioned between the back of the guard fence and the structure.